GEOGRAPHIC SCHOOL BULLETINS

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(The National Geographic Society is a scientific and educational Society, wholly altruistic, incorporated as a non-commercial institution for the increase of geographic knowledge and its popular diffusion. General Headquarters, Washington, D. C.)

Contents for Week of October 26, 1942. Vol. XXI. No. 16.

1. Flat Russia's Winter Sweeps Far South
2. Owen Stanley Mountains a Jungle Battleground
3. Inland Waters Safely Carry U. S. War Supplies
4. U. S. Troops Find Gold Coast Chocolate-Covered
5. New Bible Lands Railway Strengthens Defense of Oil

Maynard Owen Williams

IN RUFFLED SKIRTS AND PANTALETTES, MODERN PHOENICIANS TRAVEL BY LAND

Ancient Phoenicians were famous seafarers, traveling in small galleys. These modern inhabitants of Phoenician shores (now in the Levant States) have hitherto traveled on foot, but the new Haifa-Tripoli rail link gives them a chance to travel by train (Bulletin No. 5).

HOW TEACHERS MAY OBTAIN THE BULLETINS

The Geographic School Bulletins are published weekly throughout the school year (thirty issues) and will be mailed to teachers in the United States and its possessions for one year upon receipt of 25 cents (stamps or money order); in Canada, 50 cents. Entered as second-class matter, Jan. 27, 1922, Post Office, Washington, D. C., under act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in section 1103, Act of Oct. 3, 1917, authorized Feb. 9, 1922. Copyright, 1942, by National Geographic Society, Washington, D. C. International copyright secured. All rights reserved. Quedan reservados todos los derechos.

UMI

GEOGRAPHIC SCHOOL BULLETINS

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(The National Geographic Society is a scientific and educational Society, wholly altruistic, incorporated as a non-commercial institution for the increase of geographic knowledge and its popular diffusion. General Headquarters, Washington, D. C.)

Contents for Week of October 26, 1942. Vol. XXI. No. 16.

1. Flat Russia's Winter Sweeps Far South
2. Owen Stanley Mountains a Jungle Battleground
3. Inland Waters Safely Carry U. S. War Supplies
4. U. S. Troops Find Gold Coast Chocolate-Covered
5. New Bible Lands Railway Strengthens Defense of Oil

Maynard Owen Williams

IN RUFFLED SKIRTS AND PANTALETTES, MODERN PHOENICIANS TRAVEL BY LAND

Ancient Phoenicians were famous seafarers, traveling in small galleys. These modern inhabitants of Phoenician shores (now in the Levant States) have hitherto traveled on foot, but the new Haifa-Tripoli rail link gives them a chance to travel by train (Bulletin No. 5).

HOW TEACHERS MAY OBTAIN THE BULLETINS

The Geographic School Bulletins are published weekly throughout the school year (thirty issues) and will be mailed to teachers in the United States and its possessions for one year upon receipt of 25 cents (stamps or money order); in Canada, 50 cents. Entered as second-class matter, Jan. 27, 1922, Post Office, Washington, D. C., under act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in section 1103, Act of Oct. 3, 1917, authorized Feb. 9, 1922. Copyright, 1942, by National Geographic Society, Washington, D. C. International copyright secured. All rights reserved. Quedan reservados todos los derechos.

UMI

GEOGRAPHIC SCHOOL BULLETIN

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(Founded in 1888 for the Increase and Diffusion of Geographic Knowledge)

General Headquarters, Washington, D. C.

Flat Russia's Winter Sweeps Far South

THE Nazi armies hammering against a wall of Russian strength will soon be hammering against another wall—the wall of sub-zero temperatures, drifting snow, and the cutting winds of Russia's severe winter.

From the Arctic ports of Murmansk and Archangel, down through Leningrad, Moscow, and the bomb-shattered city of Stalingrad, and southward to the snow-capped peaks of the mighty Caucasus between the Black and Caspian Seas, the Germans face some of the severest weather known on any war front.

One of the first indications of winter is the piling of wood in the streets of Moscow, and the appearance of peasants "winter fat" with protective layers of clothing and foot-heavy with the *valenki*—the felt winter boot.

Russians Shiver Even in South

The more than 8,000,000 square miles of Russia's far-reaching land stretch from the ice-choked Arctic to the warmer waters of the Black and Caspian Seas and from the shores of the Baltic eastward to the Pacific. A great portion of this land is flat and low, some of it actually very little above sea level. There are no high mountain ranges stretching east and west to hold back the bitter cold of the Arctic winds howling over the frozen steppes and tundra.

In the south, where warm tropical winds might normally reach inland to warm Russia's heart, the sky-reaching peaks of the snow-covered Caucasus bar the way. Mountain walls equally high in Iran and higher in Tibet block Indian Ocean breezes from the U.S.S.R.'s Asiatic expanses. Along the Far East reaches of Siberia the winds blow almost entirely from the cold land to the warmer sea. Thus the moderating influence of the Pacific Ocean is lost.

The warmest part of Russia is the southwest section around the Black and Caspian Seas, but even there temperatures often drop below 18 degrees Fahrenheit. During the Crimean War (1854) trenches around Sevastopol were snow-covered, and many soldiers were treated for frostbite. Thus the "Riviera" of Russia also shivers at times under the pressure of winter's blow. Lowlands in Transcaucasia, between the Caucasus Mountains and the frontier of Turkey and Iran, are warm even in winter, but much of this region is high, cold, and windswept.

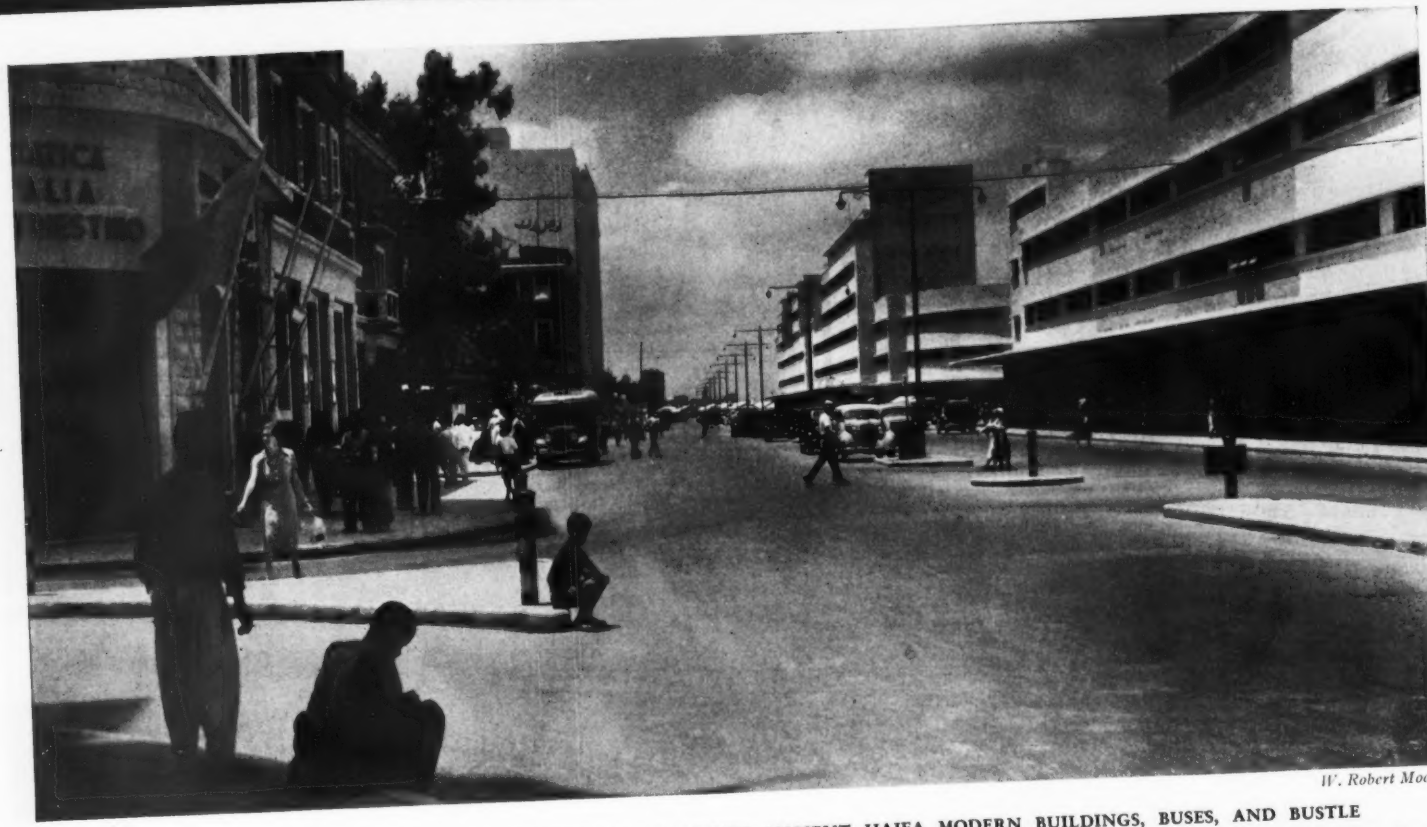
Temperature Range of 187 Degrees World's Greatest

Moving eastward through Russia one encounters steadily colder weather. The coldest spot in Russia—the coldest in the world as well—is Verkhoyansk, in northeastern Siberia. The lowest temperature ever recorded—94 degrees below zero in winter—and a July sizzler of 93 degrees above zero give this spot the greatest recorded range of temperature on the face of the earth.

In October a dreaded wind, the razor-edged buran, slashes through the open stretches of Siberia and cuts deep into the south of Russia. Whirling snow from the ground and the skies, the buran strikes with a force stronger than any Montana blizzard and is death to anyone caught in its treacherous path.

Snow falls in Moscow sometimes as early as September. The first fall lasts only a day or two, and its melting turns the land and roads into almost impassable bogs and marshes. The second snow lasts about a week, but the third usually comes to stay. Troikas—the Russian horse-drawn sleighs—appear almost as soon as the first snow has settled. Snow in the Moscow section is usually deep, and

UMI



W. Robert Moore

NEW GROWTH OF PALESTINE'S LEADING PORT HAS BROUGHT ANCIENT HAIFA MODERN BUILDINGS, BUSES, AND BUSTLE

Possibly founded as a Phoenician colony, Haifa remained until the 20th century a small town on the coastal road skirting the East Mediterranean through Syria and Palestine. Crusaders in 1100 besieged it for two weeks and practically wiped it out. A modern influx of Europeans, however, chiefly Jewish settlers, provided harbor improvements that pushed Haifa into prominence as Palestine's chief port. New growth has given the ancient town a modernistic business section along Kingsway, the broad double boulevard near the harbor with up-to-date center parking facilities. Strangers in Moslem dress (left) stare at the new structures. Haifa's 1940 population was 111,000. Now the new coastal railway line runs from this city to Tripoli (Bulletin No. 5).

GEOGRAPHIC SCHOOL BULLETIN

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(Founded in 1888 for the Increase and Diffusion of Geographic Knowledge)

General Headquarters, Washington, D. C.

Owen Stanley Mountains a Jungle Battleground

ONE of the wildest mountain battlefields of the present war has a thoroughly civilized name—the Owen Stanley Mountains in New Guinea. Inhabited by fuzzy-haired Melanesian natives who wear shell ornaments in their noses, the mountains carry the name of a long-distance discoverer, a mild 19th century British naval officer who never set foot on their rugged slopes. Owen Stanley in 1850 sailed along the coast of New Guinea in *H.M.S. Rattlesnake* and saw for the first time the mountains' hazy profile in the distance. They were christened with his name by the *Rattlesnake's* crew.

New Guinea, only 100 miles north of Australia, ranks second to Greenland among the large islands of the world. It is larger than Texas, and has six times the area of New York State. Its western half normally is part of the Netherlands Indies. Its eastern half is administered by Australia, divided into the Territory of Papua in the south and the less explored North East New Guinea Territory in the north. Its eastern half tapers south like a long finger, the bony first joint of which is the Owen Stanley range.

Mountains a High Barricade Between Near-by Enemies

Driving south toward Australia three months after Pearl Harbor, the Japanese hit the spreading obstacle of New Guinea just below the Equator. They established bases along the northeast shore, at Salamaua and Lae, and later at Buna and Gona on Holnicote Bay. Across the island's narrow eastern end on the south coast at Port Moresby, Australia's administrative center for Papua, Australian defenders stood fast, holding "the Port's" excellent harbor and airport as an outpost essential to the defense of Australia. From July until late September the opposing forces remained only 100 air miles apart. But between them rose the steep wall of the Owen Stanley Mountains (illustration, next page).

These are the rooftree of Papua. From the Albert Mountains in the northwest to the Stirling Range ending at Milne Bay in the southeast, Papua has a high backbone of mountain ridges. The Owen Stanley Mountains, occupying the center of this 600-mile chain, are the highest. They include a dozen summits over 10,000 feet, climaxed by twin-peaked Mount Victoria—13,240 feet. Lowest known pass across the range is "The Gap," south of Kokoda, 6,500 feet high.

Although Mount Victoria was scaled by Englishmen as early as 1889, few but Papuan natives had crossed the range before the present war. The Japanese had to climb its steep slopes like a staircase, one step at a time.

Mountain Climbers Develop "Sea Legs"

They moved inland by trails to the gold fields, progressing for their first "step" over low forested hills to Kokoda. This tiny settlement lies on a 1,000-foot plateau 60 miles by trail from the coast. From Kokoda upward to the south, the 65-mile route to Port Moresby climbs the high razor-back ridges. Explorers have written awesome accounts of hardships encountered in the precipitous heights of this humid, lushly tropical region. There is no way to make the climb except on foot.

Leaving Kokoda, the trail plunges at once into forests with thick undergrowth. Footholds are treacherous; narrow ledges are frequent. Hands must be free to grip roots, rocks, and saplings. The jungle heights steam under the tropical sun, keeping the traveler drenched. The night is bitterly cold.

UMI

huge drifts are piled up by winds that whip through the country. But strangely, in regions of Russia where heaviest snows might be expected, there is often none at all. In parts of Siberia, for instance, snow falls so seldom that the usual winter means of transportation elsewhere—the sledge—can't be used.

The coldest month throughout almost all Russia is January. The rivers—some of which began their winter freeze late in October or early November—are frequently frozen to the bottom. The middle and upper Volga—the great feeder line for supplies from southern seaports—is icebound for as long as 150 days of the year. Rivers in the extreme north are silenced sometimes for as long as nine months. Lakes become solid sheets of ice, linking land with land. The marshes are ice-solid. Temperatures in Leningrad drop as low as 35 degrees below zero; in Moscow, 44 below. Even Stalingrad, usually considered in the "south," has temperatures that would make a Dakota native shiver. Icebreakers plow through the Black Sea to keep the port of Odessa open. The Sea of Azov is frozen over. In the north, Archangel is ice-locked from October until May, but Murmansk, warmed by the long-reaching arm of the Gulf Stream, is open the year round.

Note: Both European and Asiatic Russia are shown on the National Geographic Society's Map of Asia, and Map of the World. A price list of maps may be obtained from the headquarters of the Society in Washington, D. C.

For information on Russia, see these GEOGRAPHIC SCHOOL BULLETINS: "Convoy Route to Russia Had 24-Hour Daylight," October 19, 1942; "Russia's Rich Oil Reserves Found from Volga to Pacific," December 8, 1941; "Gateways to Russia for U. S. Aid," November 17, 1941; "Soviet Union, Giant Among Nations," October 6, 1941.

Bulletin No. 1, October 26, 1942.

Knud Sorensen

WINTRY IRKUTSK HAS MORE THAN FROZEN ASSETS

From Lake Baikal, Eastern Siberia slopes northward down to the Arctic Ocean, offering biting winds a clean sweep from the North Pole to Irkutsk. The Angara River, here nearly a half-mile wide, flows from Lake Baikal, collects the Irkut River at Irkutsk, and flows into the Yenisei, which in turn winds down to the Arctic Ocean. In winter the unimpeded Arctic storms bring such cold that the rivers freeze deeply, and fur-bundled citizens can cross on a boardwalk. Though in the "frozen fifties," the latitudes of Lake Winnipeg in Canada, the Soviet city of Irkutsk is an industrial giant of Siberia, with airplane factories, machine-tool plants, and other facilities for strengthening Russia's defense. It is just across the river from the Trans-Siberian Railway, the world's longest rail line, linking European Russia on the Baltic with the Far East Siberian port of Vladivostok on the Pacific.

GEOGRAPHIC SCHOOL BULLETIN

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(Founded in 1888 for the Increase and Diffusion of Geographic Knowledge)

General Headquarters, Washington, D. C.

Inland Waters Safely Carry U. S. War Supplies

WITH submarines menacing coastal shipping and winter temperatures calling for shipments of fuel, the natural inland waterways of the U. S. are carrying record-breaking traffic. Navigable rivers, excluding man-made canals, give this country nearly 25,000 miles of flowing highways—enough to circle the globe. The Great Lakes add immeasurably to these submarine-free waterway possibilities.

The Great Lakes, draining the mining regions of Minnesota, Wisconsin, and Michigan, facilitate shipment to the industrial cities of Detroit, Cleveland, Pittsburgh, and Buffalo. The Illinois River joins with the Chicago River and the Chicago Sanitary and Ship Canal to provide a traffic lane from the Lakes to the Gulf of Mexico. In 1940 Great Lakes cargoes—174,546,686 tons—were nearly double those of the vast Mississippi River system, which carried 88,980,317 tons, and more than 28 per cent of the total water-borne commerce of the U. S. Traffic between Lakes Huron and Erie, through their connecting link, the Detroit River, recently was nearly as great as that of the Suez and Panama Canals combined.

Commerce on inland waterways rose more than 50 per cent from 1920 to 1940. Preliminary figures for 1941 indicate a 60 per cent increase over 1940.

Mississippi System Ranks Next to Great Lakes

The Mississippi and its 44 navigable tributaries form North America's greatest drainage system. They link the Idaho-Montana border, at the headwaters of the Missouri, with the New York-Pennsylvania boundary where the Allegheny curves across the line. The Mississippi, rising in Minnesota's Lake Itasca, some 115 miles south of Canada, flows 2,470 miles to the Gulf. For 2,000 miles it is navigable—from its mouth to Minneapolis where the Falls of St. Anthony end navigation. Commercial shipping stops at St. Paul, 13 miles below.

Greatest of the tributaries, the Ohio annually discharges into the Mississippi 5 trillion cubic feet of water (9,480,000 a minute)—over two-thirds the volume of the Mississippi and Missouri combined—and might almost be mistaken for the main stream. The Missouri, next in size, pours 7,200,000 cubic feet a minute into the Mississippi. The Arkansas flows from central Colorado through spectacular Rocky Mountain scenery. The Red River, southernmost of the big tributaries, rises in northwest Texas and flows through rocky canyons, rolling prairies, and swampy forests. Smaller, but still serviceable, rivers are the Des Moines, reaching the Mississippi at Keokuk, site of a large power plant; the White, pouring in from the west; and the Yazoo, meeting the big river at Vicksburg.

Sixteenth Century Explorers Started River Traffic

Traffic has followed rivers of the Mississippi Valley since explorers pushed westward in the 16th century. Trappers and traders followed, and after creation of the Northwest Territory in 1787 settlers traveled west in river craft of all sorts from log canoes to flatboats, keelboats, and barges, built along the Ohio and its tributaries. They built trading posts and forts at the mouths of rivers, fighting off river pirates and other forerunners of 20th century gangsters.

A notorious stamping-ground of robbers was a stretch along the left bank of the Mississippi known as the Natchez Trace. Pioneers shipping produce by flatboat down to New Orleans returned on horseback to save time. With gold in their saddlebags, they were natural prey for highwaymen in cypress swamps

UMI

Large leeches that stand half erect on the undergrowth fasten themselves to passers-by. Numerous large ants can make travelers miserable.

Transportation of supplies and equipment has always been the work of native carriers, the best of them capable of bearing packs up to 70 pounds. Their ability to transport 50-pound loads along cliff edges, across vine suspension bridges and over pathless ravines has earned admiration for their endurance. One explorer observed that a few weeks in these mountains develops an effect akin to "sea legs." When the traveler returns to flat ground, he has to break the habit of lifting his knees almost to his chin at every step.

Primitive tribes are found throughout Papua, the most populous portion of New Guinea. Mountain villages and gardens are common. Their inhabitants have many superstitions and savage practices, but generally prove friendly to foreigners. Sweet potatoes, yams, and bananas are abundant for their diet.

Note: For information on New Guinea, see these GEOGRAPHIC SCHOOL BULLETINS: "Gold and Savages on New Guinea, World's Second Largest Island," March 20, 1942; and "Airline Center for Gold Fields Picked as New Guinea Capital," October 12, 1941.

Bulletin No. 2, October 26, 1942.

E. W. Brandes

THE LALOKI MAKES A SMALL NIAGARA LEAP DOWN A MOUNTAIN STAIRSTEP

To attain heights above 10,000 feet on a strip of land 100 air miles wide, New Guinea's Owen Stanley Mountains must rise—and drop—an average of more than 200 feet every mile. Cliffs and precipices are numerous on the mountains' stairstep sides, like this jungle-blanketed cliff over which the Laloki River plunges, 20 miles from Port Moresby. Here the short, swift mountain river drops 80 or 90 feet, at Rona Falls. A road from "the Port" past the falls was in peacetime the only highway of the southeast section of the island. Travel elsewhere was by jungle trail. The Laloki valley holds Papua's only rubber plantations.

GEOGRAPHIC SCHOOL BULLETIN

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(Founded in 1888 for the Increase and Diffusion of Geographic Knowledge)
General Headquarters, Washington, D. C.

U. S. Troops Find Gold Coast Chocolate-Covered

AMERICANS now stationed at Accra in the British Crown Colony of the Gold Coast are just around the corner from Dakar, the question-mark port of French West Africa. Only 1,350 miles southeast of this westernmost big port of Africa, they are close enough to observe any change of status that might menace Good Neighbor Brazil, where Natal is just 1,870 miles away across the South Atlantic.

While in Accra, the Gold Coast's leading port, the U. S. forces are discovering that all of them have been long-standing customers of this British colony. For the Gold Coast is where chocolate bars are born.

Cacao Industry Sprouted from Few Seeds 50 Years Ago

A slim rectangle, 78,000 square miles in area, mostly tropical rain forest, the colony produces more cacao—from which chocolate and cocoa come—than any other country in the world. From 250,000 to 275,000 tons of cacao beans are harvested there every year, accounting for nearly half of the world's crop.

In times of peace and leisurely chocolate-munching, possibly 40 per cent of the Gold Coast's "brown gold" may reach the United States. Uncle Sam in 1940 bought 721 million pounds—a purchase involving more than $11,000,000. From giant Brazil in the same year came only 180 million pounds of cacao.

One of the leading agricultural products of Africa, Gold Coast cacao is a recent immigrant from the New World. The first seeds, according to local traditions, in a single cacao pod were smuggled into the Crown Colony some 50 years ago. Before 1915 they had sprouted into a world-beating chocolate industry. Chocolate as food or drink, however, is little known in the Gold Coast. The cacao crop is exported in the bean and processed into edibility elsewhere.

Whole Family Helps Dry Chocolate Beans in Courtyard

The big business of growing cacao is almost entirely in the hands of Negro natives, from soil to export ship. Europeans are not permitted to own land in the colony. The typical cacao farmer is a Negro, living in a village of 500 inhabitants or less, walking a mile or two twice daily to his cacao groves in clearings in the rain forest. When the golden cacao pods are ripe, the farmer calls on his wives and older sons and daughters to harvest the crop. The men slash the pods from the tree, while wives and daughters collect them in home-woven baskets. All the children join in the family duty of taking the cacao beans from the pod and drying them on mats in the sunny courtyard around which their home is built. Native brokers buy the farmer's crop, native inspectors and clerks handle the purchase. Many farmers harvest and market their cacao co-operatively.

No deep harbor was available anywhere along the Gold Coast until 1928 (at Takoradi, 120 miles west), but Accra became the center for export, although every pound of cacao was transported from the beaches in surf boats to ships anchored two miles offshore.

Accra's recent growth, paced by the remarkable expansion of the Gold Coast's cacao crop, has made it a modern city with medieval landmarks. It has a straight, wide main street over 2 miles long, with modern bank and business buildings. There are good schools, hospitals, and even a college to serve this region where natives outnumber non-African population almost 1,000 to 1. British and

UMI

through which the Trace ran, north of Natchez, to Nashville. Steamboats eventually provided a safer ride home for the merchants and liquidated the brigands of the Trace. The first Mississippi steamer sailed from Pittsburgh to New Orleans in 1811.

Lewis and Clark explored the Missouri in 1804-5. In 1830 the American Fur Company's steamers began to replace the rude craft which, for over 100 years, had borne furs from the western forests. From 1789 to 1886 the U. S. spent about $57,000,000 improving the Mississippi system. Since 1879 the Army and civilian engineers of the Mississippi River Commission have worked on navigation problems. The Secretary of War has charge of inland waterways.

River traffic reached its peak just before the Civil War. Afterward, with development of railroads, paddleboats went the way of the canoes of the Indians whose highways rivers had been before white men came. Flatboats of trappers and gold seekers were superseded by river steamers and steam-towed steel barges. Slow freight, however, continued to "coast" on oldtime barges. Now river traffic is rising to a new high. Diesel-engined boats tow barges loaded with war materials —ore from mines to plants; oil from wells to refineries and home oil-burners; finished products to seaports for transshipment to war zones.

Note: Waterways of the United States may be traced on the National Geographic Society's Map of the United States. For further information on inland waterways, see the following GEOGRAPHIC SCHOOL BULLETINS: "Mississippi Traffic Makes Travel History," December 15, 1941; and "Ol' Man River Floats Heavy Traffic 400 Years After Discovery," May 5, 1941.

Bulletin No. 4, October 26, 1942 (over).

B. Anthony Stewart

PUFFING TUGS AND SHUTTLING FERRIES REPLACE BIRCH-BARK CANOES

Green Bay, at the southern tip of the water loop that separates the Door Peninsula, thumb of mitten-shaped Wisconsin, from the mainland palm, has one of the busiest inland harbors in the Great Lakes region. The largest lake ships can enter to deposit cargoes of coal (right) from eastern mines and load grain, lumber, and machinery that are Green Bay's chief exports. The site was visited in 1634 by Nicolet, whom Champlain sent to seek the oft-rumored short-cut to China. Founded by the French in 1745, Green Bay is the oldest town in Wisconsin, continuing a history of nearly 3 centuries as an inland port.

GEOGRAPHIC SCHOOL BULLETIN

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(Founded in 1888 for the Increase and Diffusion of Geographic Knowledge)

General Headquarters, Washington, D. C.

New Bible Lands Railway Strengthens Oil Defense

A RAILROAD trip through Old Testament sites to scenes of New Testament happenings is now possible, on the new line built along the Mediterranean's east coast between Tripoli in the Levant States and Haifa in Palestine. These ports are the coastal ends of the Y-shaped pipeline pouring oil west from Iraq.

Using the new link between existing rail lines, trains can run on a shorter route from the Suez Canal in Egypt around the eastern Mediterranean into Turkey to the Bosporus. In western Turkey at Malataya the shortened East Mediterranean railroad system joins the trans-Europe line popularly called the Berlin-to-Baghdad, which actually connects Iraq and Baghdad with railroads of all continental Europe as well as with Germany.

Bars the Way to Iraq's Oil Fields

Along these East Mediterranean rails are strung some of the world's more important Moslem populations—those of Egypt, Palestine, the Levant States, and Turkey, with spurs to those of Trans-Jordan and Iraq.

Crossing lands that are controlled by the British or the Fighting French—with the exception of neutral Turkey—this rail system strengthens the hold of the United Nations on the eastern Mediterranean, speeding supplies and reinforcements along a coast which has already been attacked by Axis planes. This region would give enemy invaders one of the most direct routes to the oil fields of Iraq to the east. In the first World War, British forces fighting there were handicapped by lack of rail transportation. At that time the railway was extended from the Suez Canal northward as far as Haifa.

Mountains crowding the narrow coastal plain delayed earlier extension of the line. Construction was costly. The railway had to cut its way through rocky promontories projecting into the sea, and bridge the gorges of mountain streams.

Cuts Trip to One Third

Haifa and Tripoli, with Beyrouth (Beirut) between, were previously reached by rail over mountain spurs from an inland line that parallels the coast. The new railroad is only 150 miles long; yet it shortens the rail journey to the three coastal cities by more than 300 miles. Before its completion, travelers reached the cities over a rail route like the letter "E," a trip of 452 miles. For the most part, however, travelers in the past have gone by automobile on a highway that follows the coast (illustration, next page) or by the small steamers of coastwise traffic.

The southern end of the new line, Haifa, is Palestine's chief port, especially busy now with the export of oil piped from Iraq (illustration, inside cover). To the north the rails pass Acre, once the great port through which Crusaders funneled Oriental luxuries into ships bound for Europe. Richard the Lion-Hearted fought his way into the city in 1191. The Crusaders' loss of Acre to the Moslems a century later, closing their commercial outlet, brought the Crusades to a close, and stimulated the westward search for a route to the Indies that took Columbus into the Western Hemisphere.

The Haifa-Tripoli rail link passes numerous crumbling castles built as Crusader strongholds prior to 1291. North of Acre the route enters Lebanon, southwesternmost of the four units of the Levant States, mandated to France after the first World War (illustration, cover). Spurs of the Liban Mountains jut into the

UMI

French air lines in West Africa used the Accra airport regularly. Lifeline of the city's growth is the railroad inland to Kumasi, completed in 1923; highways now provide competition for this road in bringing the cacao bean crop to the coast. Natives accent Accra's name on the last syllable.

Americans at Accra will find the Gold Coast a comparatively healthful region of the tropics. It is 340 miles north of the Equator. Temperatures average 84 degrees. The rains, which end in July, are followed by a dry season. The latter is climaxed by the harmattan, a dry, dust-laden wind from inland. In December and January this wind sweeps across from the Sahara which lies to the north.

Cacao has averaged 70 per cent of the value of the Gold Coast export trade, but the rich region has many other valuable products. Palm oil is prominent among exports to the U. S. (illustration, below). Gold always has been important. Diamond production is second only to that of the Belgian Congo. The gems, however, are uniformly small. Manganese and aluminum ores have been recent additions to the mineral export list. Coconuts, kola nuts, citrus fruits, timber, and rubber also are exported. At the turn of the century rubber was the money crop on the Gold Coast, but cacao replaced it as East Indian rubber forged ahead.

Note: Accra and the Gold Coast appear on the National Geographic Society's Map of the Theater of War in Europe, Africa, and Western Asia.

For further information on the Gold Coast's important product, see "Ship Shortage May Diet Your 'Chocolate Tooth'," in the GEOGRAPHIC SCHOOL BULLETINS, October 12, 1942.

Bulletin No. 4, October 26, 1942.

T. J. Alldridge

OIL PALMS YIELD GOLD COAST "GOLD NUGGETS"

Natives climb the 30-foot oil palm tree to get this cone-shaped fruit cluster. The fruit, about 200 to the cluster, yields an orange-colored oil like butter, which is exported to make soap. Its faint violet odor perfumes the soap. Each fruit has several hard black kernels, also exported to be crushed for palm-kernel oil. The Gold Coast ranks third as a source for U. S. palm oil imports. Natives refine the oil for food, called chop oil. Thus the oil palm is nearly as valuable as the coconut palm.

Mediterranean as rocky headlands for the railroad to tunnel or skirt.

The railroad passes through the famous old Phoenician cities of Sour (Tyre) and Saida (Sidon). Tripoli, northern end of the new stretch of railroad, was capital of the Phoenician federation.

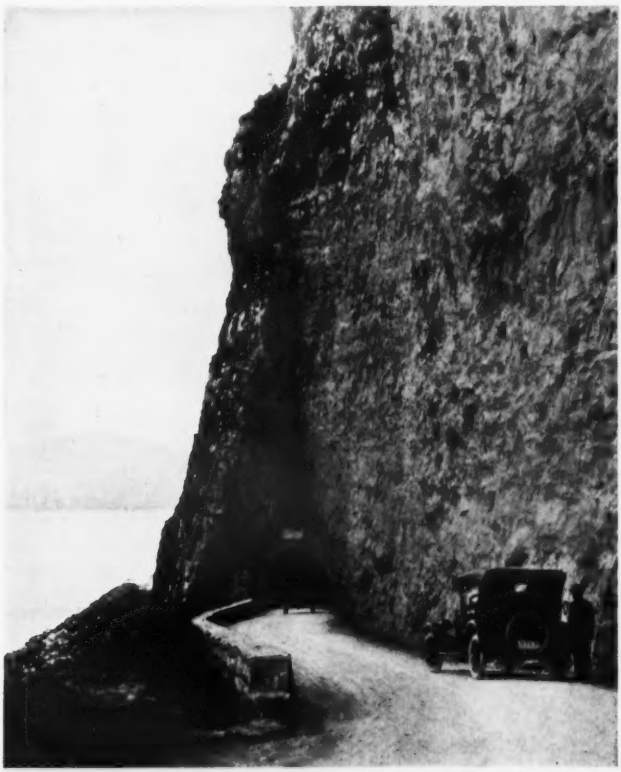
In Biblical times Tyre was the headquarters of King Hiram, who supplied cedars of Lebanon to King Solomon's temple in Jerusalem. Sidon has its place in the New Testament as the most northern city visited by Jesus.

Note: The railroads for which the Haifa-Tripoli line furnishes a new link may be found on the National Geographic Society's Map of Bible Lands.

For further information about lands of the eastern Mediterranean, see the following articles in the *National Geographic Magazine:* "Mediterranean Checkerboard," April, 1942; "Bombs Over Bible Lands," August, 1941*; and "The Road of the Crusaders," December, 1933; also these GEOGRAPHIC SCHOOL BULLETINS: "Bible Land of Syria Proclaimed Independent Republic," October 27, 1941; "French-Governed Levant States, 'Sunrise Land' of History," December 16, 1940.

(*Issues marked by an asterisk are included in the special list of National Geographic Magazines available to teachers at 10¢ each in groups of ten.*)

Bulletin No. 5, October 26, 1942.



Walter L. Wright

BOTTLENECKS MAR THE NEAR EAST'S "MAIN STREET"

Rocky headlands dropping sheer into the Mediterranean have handicapped all travel along the coastal road of Palestine and the Levant States. Travelers on foot have had to climb or detour. The highway, a modern improvement, has to wind and tunnel, as at Batrun (above). Such obstacles delayed construction of a rail route until this year. Alexander the Great, Roman legions, early Christians, Saracens, Crusaders, and Arab tribesmen have paraded in such numbers down the coast road as to make it the Main Street of the Near East.

UMI